

## CLAIMS

1. Method for sorting particles (100), including the following steps:

- 5       - marking of particles, in order to modify their optical index,
- placement of the said particles (100) on at least one waveguide (104) of a support (108),
- 10       - injection of light radiation R through the said waveguide, causing displacement of particles on the said waveguide and separation of the particles.

2. Method according to claim 1, the particles forming clusters (114, 116, 118) on the  
15 waveguide (104).

3. Method according to either claim 1 or 2, the sorted particles having identical compositions but different sizes.  
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4. Method according to either claim 1 or 2, the sorted particles having the same or approximately the same size but different compositions.

25       5. Method according to one of claims 1 to 4, the particles being cells or macromolecules or microballs.

6. Method according to one of claims 1 to 5, the inserted radiation being in a spectral range between the near ultraviolet and the infrared.

5                   7. Method according to one of claims 1 to 6, the particles being microballs, and microball marked cells, and the radiation being located in the infrared range.

10                   8. Method according to one of claims 1 to 7, some particles being metallic or being marked by metallic particles.

15                   9. Method according to claim 8, some particles being gold particles or being marked by gold particles.

20                   10. Method according to one of claims 1 to 9, the radiation inserted in the waveguide being polarised in transverse magnetic mode.

11. Method according to one of claims 1 to 10, in which the particles are immersed in a liquid medium.